

What is Claimed is

1. In a video light producing device comprising a color separating and mixing element, having a color separating and mixing sector having a plurality of different surfaces arranged in its transparent cube, for receiving predetermined polarized light from a light source on a first face of the cube, giving lights to reflection type light modulating elements respectively arranged opposite to second, third, and fourth faces of the cube as well as receiving their reflected modulated lights thereon, and mixing the incident reflected modulated lights and emitting light obtained by the mixing from a fifth face of the cube,

a video light producing device wherein

the light from the light source is changed into two light fluxes by two rod integrators, and

the two light fluxes cross each other on the predetermined optical surface of the color separating and mixing sector, to be introduced into a first irradiation area and a second irradiation area of the predetermined reflection type light modulating element.

2. The video light producing device according to claim 1, wherein

there is provided a light source comprising a reflector in the shape of a curved surface, and

approximately parallel lights from said light source are condensed, and are introduced into light incidence surfaces of said two rod integrators.

3. The video light producing device according to claim 1, wherein

there is provided a light source comprising a reflector for forming two light converging points from one light emitting point, and

light incidence surfaces of said two rod integrators are respectively arranged in the vicinity of the positions of the two light converging points of said light source.

4. The video light producing device according to claim 1, wherein

there are provided two light sources, and

lights from the light sources are respectively introduced into light incidence surfaces of said two rod integrators.

5. The video light producing device according to claim 1, wherein

each of the light sources is composed of a solid-state light source.

6. The video light producing device according to claim 1, wherein

an single optical element is provided at a position

on the light incidence side of said color separating and mixing element, and

the two light fluxes which arrive in a crossing state is refracted by said optical element

7. The video light producing device according to claim 1, wherein

an optical system arranged on the light emission side in said two rod integrators comprises at least a first optical element for condensing light emitted from each of the rod integrators and a second optical element arranged in the vicinity of light converging point of the first optical element.

8. The video light producing device according to claim 7, wherein

said two rod integrators are arranged parallel to each other, and

said optical system comprises a third optical element for refracting lights passing through said second optical element and crossing the refracted lights each other.

9. The video light producing device according to claim 7, wherein

said two rod integrators are arranged unparallel to each other, and

lights passing through said second optical element

cross each other.

10. The video light producing device according to claim 1, wherein

letting  $A : B$  be an aspect ratio in the reflection type light modulating element, each of the first irradiation area and the second irradiation area is divided at a ratio of  $A : B/2$ .

11. The video light producing device according to claim 1, wherein

the light source, the color separating and mixing element, and the optical element leading to the color separating and mixing element from the light source are unitized.

12. A projection type video display comprising the video light producing device according to any one of claims 1 to 11.